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ENVIRON

April 24, 1995

Mr. Gregg Kwey
Senior Water Resource Control Engineer
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Aquifer Testing
ITT Burbank Site (File No. 014.0852)

Dear Mr. Kwey:

INTRODUCTION

At the direction of ITT Corporation, ENVIRON requests approval to conduct short term aquifer, or "pump-out" tests at six locations at the above-referenced property. Information obtained during this investigation will be used to develop preliminary estimates of aquifer hydraulic conductivity in the perched "A" and "B" zones underlying the site.

ITT plans to obtain this information as quickly as possible, therefore, ITT is requesting that the RWQCB expedite review and approval of this work. As we noted in our telephone messages, we would like to initiate the field work on Wednesday, April 26, 1994.

SCOPE OF WORK

"Pump-out" tests essentially can be considered to be mini-aquifer tests. Such tests are more reliable than traditional slug testing, especially in relatively permeable formations. During pump-out tests sufficient water is removed from the well to generate a sustained aquifer response, and the area of influence of the test is greater than that achieved during slug testing.

ENVIRON intends to perform pump-out tests on six wells. Two wells are screened in the perched ground water zone (Wells MW-5 and MW-19); two are screened in the "A" ground water zone (Wells MW-7 and MW-20); and two wells are screened in the "B" ground water zones (Wells MW-8 and MW-22). We have selected two wells in each zone because information obtained from only one test in each zone may not be sufficient to provide an estimate of the range of aquifer hydraulic conductivities at the site.

Prior to testing the "A" and "B" zone wells, the pumps will be removed, and a submersible pump capable of pumping between 20 to 50 gallons per minute will be placed in each well. Pumps will not be removed from the two perched zone wells, as these wells are not expected to produce large quantities of ground water. Wells will be tested sequentially, data will be collected using data loggers and electronic transducers, and data will be analyzed in the field using a laptop computer and the aquifer test analysis program AQTESOLV. The general procedure that will be followed when testing each well is described below:

- As stated previously, with the exception of the perched zone wells, the pump will be removed from each well and a submersible pump will be installed.

- The water level in the test well will be measured. The transducer will be inserted in the test well and connected to the data logger. The transducer will be allowed to stabilize for approximately ten minutes prior to initiation of pumping.

- The pump will be started, and approximately six well volumes will be pumped quickly from the well. During pumping, the data logger will automatically record water level measurements. The pumping rate will be determined using a calibrated bucket. After six well volumes have been evacuated, the pump will be turned off. The data logger will automatically record recovery water level measurements. Recovery measurements will continue to be recorded until the water level is within approximately 0.03 feet of the initial measurement.

- The pump will be removed from the well, and steam cleaned prior to insertion into another well. The Well Wizard pump assembly will be replaced in the well, and the well will be sealed. Water produced during testing will be contained, profiled, and disposed of in accordance with local, state and federal requirements.

- Test data will be analyzed using the aquifer test analysis program AQTESOLV. Data will also be graphed and analyzed by hand as a check on the computer-aided analysis. Results will be reported to the RWQCB in a brief letter report.

- All field work will be conducted in compliance with the attached Health and Safety Plan.

ITT awaits the RWQCB's timely review and approval of the scope of work contained in this letter. ITT is prepared to proceed with the recommended scope upon approval from the RWQCB.

Please call either Teresa Olmsted at ITT (714-754-2342) or either of the undersigned if you have any questions regarding this submittal and/or recommendations contained herein. Please note that Ms. Olmsted has a new office address as follows: Teresa P. Olmsted, ITT Cannon, 666 E. Dyer Road, Mail-Stop #48, Santa Ana, California, 92704.

Very truly yours,

Carol L. Serlin, R.G.
Manager, Geosciences

George O. Linkletter, R.G., Ph.D.
Principal

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cc: Ana Veloz, RWQCB
Phil Kani, LAFD
Teresa Olmsted, ITT
ITT Distribution

2166-07418

SITE HEALTH AND SAFETY PLAN
PUMP-OUT TESTING

ITT FLUID PRODUCTS CORPORATION
1200 FLOWER STREET
BURBANK, CALIFORNIA

ENVIRON Corporation
SITE HEALTH AND SAFETY PLAN

This Site Health and Safety Plan is specifically prepared for:

Project Location	**1200 Flower Street, Burbank, California**
Case Number	**04-3484**

ALL PERSONNEL PARTICIPATING IN THE FIELD MUST BE TRAINED IN THE GENERAL AND SPECIFIC HAZARDS UNIQUE TO THE JOB AND, IF APPLICABLE, MEET RECOMMENDED MEDICAL EXAMINATION REQUIREMENTS. ALL SITE PERSONNEL AND VISITORS SHALL FOLLOW THE GUIDELINES, RULES, AND PROCEDURES CONTAINED IN THIS SAFETY PLAN. THE PROJECT MANAGER OR SITE HEALTH AND SAFETY OFFICER MAY IMPOSE ANY OTHER PROCEDURES OR PROHIBITIONS BELIEVED TO BE NECESSARY FOR SAFE OPERATIONS.

THIS PLAN IS PREPARED TO INFORM ALL FIELD PERSONNEL, INCLUDING ENVIRON CONTRACTORS AND ENVIRON SUBCONTRACTORS, OF THE POTENTIAL HAZARDS ON THE SITE. HOWEVER, EACH CONTRACTOR OR SUBCONTRACTOR MUST ASSUME DIRECT RESPONSIBILITY FOR ITS OWN EMPLOYEES' HEALTH AND SAFETY.

TABLE OF CONTENTS

I. INTRODUCTION

A. SITE LOCATION: **1200 Flower Street, Burbank, California Glendale, California.**

B.	PLAN PREPARED:	Name **Kim Little**	Date **March 20, 1995**
C.	PLAN APPROVED:	Task Manager **Carol Serlin** Carol Serlin	Date 4/24/95
		HSC **Kim Little** Kim Little	Date 4/24/95 4/25/95
D.	PLAN REVISED:	Name	Date
E.	REVISION APPROVED:	Project Manager	Date
		HSC	Date

F. THE POSSIBLE HAZARDS ON THIS JOB ARE EXPECTED TO BE:
Possible exposure to low levels of Volatile Organic Compounds (though not expected) and total petroleum hydrocarbons (TPH) (see page 5); trip and fall, electrical, mechanical

G. REQUIRED PERSONAL PROTECTIVE ITEMS AND EQUIPMENT FOR THIS PROJECT:
Hardhat, steel-toed boots, safety glasses, gloves when contact with ground water is expected; also OVM.

II. PERSONS RESPONSIBLE AND INVOLVED

A. PROJECT MANAGER **Carol Serlin**

Health and Safety Responsibilities **Overall responsibility for project compliance with health and safety plan.**

B. SITE SUPERVISOR **Mike Barnes**

Health and Safety Responsibilities **Implementation of the site-specific health and safety plan for all field-related activities.**

C. SITE HEALTH AND SAFETY OFFICER **Same as site supervisor.**

Health and Safety Responsibilities

D. OTHERS **Mark Katchen, CIH**

Health and Safety Responsibilities **Responsible for providing health and safety consultation for the project.**

E. SUBCONTRACTORS

Health and Safety Responsibilities **Responsible for the safe operation of equipment while on-site and off-site for the health and safety of contractor workers.**

III. FACILITY BACKGROUND

A. FACILITY BACKGROUND AND DESCRIPTION: **Facility manufactures aerospace components. It is located in a commercial and light industrial area of Burbank. ITT is in the process of moving it's operations, and has therefore demolished a number of buildings, with plans to demolish the remaining structures.**

B. SITE HISTORY (USE OF SITE, ORIGIN OF CONTAMINATION): **Facility is an aerospace manufacturing facility. A number of the on-site buildings have been demolished. The remaining buildings are currently occupied and are used by ITT. Perched and upper-water bearing groundwater at the site is known to contain diesel (from underground storage tank releases), detectable levels of petroleum hydrocarbons, and various volatile organic compounds (see page 5 for listing and PELs).**

C. HAZARDOUS INCIDENCE HISTORY (HISTORY OF INJURIES, EXPOSURE, CHEMICAL SPILLS, COMPLAINTS, ETC.): **Unknown.**

D. PURPOSE OF ACTIVITY/OBJECTIVE OF ENVIRON'S WORK (CHARACTERIZATION, REMEDIAL ACTIONS, EXCAVATION, TRENCHING; INCLUDE LOCATION OF AREAS OF KNOWN OR SUSPECTED CONTAMINATION): **ENVIRON will be on-site to conduct pump-out tests on six wells (MW-5, MW-7, MW-8, MW-19, MW-20, and MW-22). A subcontractor will remove the pumps from the wells and install submersible temporary pumps. Each well will be pumped for approximately 1/2-hour, then the pump will be turned off. Water levels will be measured using data loggers and transducers. No ground water samples will be collected. Exposure to on-site contaminants is expected to be minimal since contact with ground water is not expected. ENVIRON personnel will take an OVM reading in the breathing zone immediately upon removal of the well cap. If levels above 1 ppm are detected, personnel will leave area and consult HSC.**

E. SITE STATUS (ACTIVE, INACTIVE, UNKNOWN): **Inactive.**

F. SURROUNDINGS (LOCATIONS OF CITY, ROADS, RESIDENCES, BUSINESS, NATURAL FEATURES, GRADIENTS, TANKS, ETC): **Commercial, light industrial.**

G. SITE MAP (ATTACHED MAP AT END OF THIS PLAN SHOWING SALIENT FEATURES, INCLUDING LOCATIONS OF ENVIRON'S WORK AND LOCATIONS OF CONTAMINATED AREAS). **See Figure 1.**

H. CLIMATE

AVERAGE WIND SPEED AND DIRECTION: 5-10 mph

MEAN HIGH TEMPERATURE: 75

MEAN LOW TEMPERATURE: 60

IV. IDENTIFIED CHEMICAL CONTAMINANTS

A. IDENTIFIED CHEMICAL CONTAMINANTS KNOWN TO BE PRESENT

List chemical contaminants that have been identified, their concentration, and the environmental media in which they are present. Hazardous property information for selected chemicals appears in the appendix. Review this information for all chemicals listed below. If chemicals are not listed in the appendix, you must enter the hazardous property information in the appendix in the spaces provided.

Chemical	Media	Permissible Exposure Limit (PEL)
benzene	GW,So,Concrete	1 ppm
1,1-dichloroethene (vinylidene chloride)	GW,So,Concrete	1 ppm
vinyl chloride	GW,So,Concrete	1 ppm
1,2-DCA	GW,So,Concrete	1 ppm
carbon tetrachloride	GW,So,Concrete	2 ppm
chloroform	GW,So,Concrete	2 ppm
1,1,2-TCA	GW,So,Concrete	10 ppm
naphthalene	GW,So,Concrete	10 ppm
1,3,5-trimethylbenzene	GW,So,Concrete	25 ppm
trichloroethene	GW,So,Concrete	25 ppm
tetrachloroethene (PCE)	GW,So,Concrete	25 ppm
toluene	GW,So,Concrete	100 ppm
1,1-dichloroethane	GW,So,Concrete	100 ppm
1,1,1-trichloroethane (1,1,1-TCA) (methyl chloroform)	GW,So,Concrete	350 ppm
trichloroflouromethane	GW,So,Concrete	1000 ppm
cis/trans 1,2-DCE	GW,So,Concrete	n/a
bromodichloromethane	GW,So,Concrete	n/a

B. SUSPECTED CHEMICAL CONTAMINANTS ON-SITE

See previous table

Codes for environmental media:

SI	Sludge
GW	Ground water
SW	Surface water
LW	Liquid waste
So	Soil
A	Air
Other -	Specify

C. CHEMICAL CONTAMINANTS CHARACTERIZATION

Has the site been adequately characterized to the best of your knowledge?

Yes No **XX**

If yes, list applicable references or previous reports/studies.

V. GENERAL WORK PRACTICES

- No one will be permitted to engage in work operations alone.

- Smoking, eating, drinking, and chewing gum or tobacco will not be permitted within the work zones.

- Personnel should keep track of weather conditions and wind direction to the extent they could affect potential exposure.

- Personnel should be alert to any abnormal behavior on the part of other workers that might indicate distress, disorientation, or other ill effects.

- Personnel should never ignore symptoms that could indicate potential exposure to chemical contaminants. These should be immediately reported to their supervisor or the Site Health and Safety Officer.

- Personnel will wear gloves when contact with soil is expected. Personnel will thoroughly wash ahnds before eating, drinking, or smoking.

VI. SITE CONTROL/WORK ZONES

A. DESCRIBE LOCATIONS OF EXCLUSION ZONE, HOT LINE, CONTAMINATION REDUCTION ZONE, AND DECONTAMINATION AREA AND SUPPORT ZONE. SHOW LOCATIONS ON SITE PLAN.

The exclusion zone will be that area immediately surrounding the well that is being pumped. It will be the responsibility of the site health and safety officer to prevent unauthorized personnel from entering the exclusion zone. When necessary, such as in high traffic areas, the exclusion zone will be delineated with barricade tape, cones, and/or barricades. It is not anticipated that a contamination reduction zone, decontamination area, or support zone will be required.

B. DEFINE THE SITE CONTROL/SECURITY MEASURES (FENCING, LOCKED GATES, KEYS, SECURITY GUARDS, FLAGGING, ETC.).

Site is fenced. Barrier tape or cones will be used, if necessary, to keep unauthorized personnel form entering the area.

C. DESCRIBE SAFETY PLAN LOCATIONS.

A copy of the health and safety plan will be kept in the ENVIRON field vehicle at all times.

VII. SITE RESOURCES

SITE RESOURCES LOCATIONS

Toilet facilities: on-site

Drinking water supply: on-site

Telephone: in ENVIRON truck or field vehicle

Radio: NA

Other: NA

VIII. HAZARD MITIGATION

Identify procedures to mitigate all hazards listed in Section XIV by placing the task number next to the appropriate mitigating measure. Listing of standard procedures is not inclusive. A specific procedure must be entered to mitigate each hazard identified in Section XIV.

Activity List Number	A. Mechanical Hazards
NE	Do not stand near backhoe buckets and earthmoving equipment.
1	Verify that all equipment is in good condition.
NE	Do not stand or walk under elevated loads or ladders.
NE	Do not stand near unguarded excavations and trenches.
NE	Do not enter excavations or trenches over 5 feet deep that are not properly guarded, shored, or sloped.
1	Consult HSC if other mechanical hazards exist.
	B. Electrical Hazards
NE	Locate and mark buried utilities before drilling.
NE	Utilities located by:
NE	Maintain at least 10-foot clearance from overhead power lines.
NE	Contact utility company for minimum clearance from high power lines.
NE	If unavoidably close to buried or overhead power lines, have power turned off, with circuit breaker locked and tagged.
1	Properly ground all electrical equipment.
1	Avoid standing in water when operating electrical equipment.
NE	If equipment must be connected by splicing wires, make sure all connections are properly taped.
1	Be familiar with specific operating instructions for each piece of equipment.
	C. Chemical Hazards

Activity List Number	
1	Use personal protective equipment indicated in Section X.
1	Conduct direct reading air monitoring to evaluate respiratory and explosion hazards (list instrument, action level, monitoring location, and action to be taken in Section IX).
NE	Consult HSC for personal air monitoring.

Comments:

VIII. HAZARD MITIGATION (Continued)

D. Temperature Hazards

1. Heat Stress

Activity List Number

1

When temperature exceeds 70°F, take frequent breaks in shaded area. Unzip or remove coveralls during breaks. Have cool water or electrolyte replenishment solution available. Drink small amounts frequently to avoid dehydration. Count the pulse rate for 30 seconds as early as possible in the rest period. If the pulse rate exceeds 110 beats per minute at the beginning of the rest period, shorten the work cycle by one-third.

NE

E. Confined Spaces

Confined spaces include trenches, pits, sumps, elevator shafts, tunnels, or any other area where circulation of fresh air is restricted or ability to readily escape from the area is restricted. Consult HSC prior to entering confined space.

- Obtain permit for confined space entry.
- Monitor O_2 and organic vapors before entering. If following values are exceeded, do not enter:
  - O_2 less than 19.5% or greater than 25%.
  - Total hydrocarbons greater than 5 ppm above background, if all air contaminants have not been identified.
  - Concentrations of specific contaminants exceeding action level in Section IX if all contaminants are identified.
- Monitor O_2 and organic vapors continuously while inside confined space. If values cited in Section IX are exceeded, evacuate immediately. Record instrument readings.
- At least one person must be on standby outside the confined space who is capable of pulling workers out of confined space in an emergency.
- Use portable fans or blowers to introduce fresh air to confined spaces whenever use of respirator is required.
- Work involving the use of flame, arc, spark, or other source of ignition is prohibited within a confined space.

VIII. HAZARD MITIGATION (Continued)

Activity List Number	
NE	F. Radiation Hazards
	If radiation meter indicates 2 mR/hr or more, leave the area and consult HSC.
	G. Biohazard
NE	Poison oak, poison ivy.
NE	Infectious waste.
NE	Rabid animals.
NE	Ticks, mosquitoes, and other insects (disease carriers or poisonous).
NE	Avoid breathing dust in dry desert or central valley areas (valley fever).
NE	Biological or animal laboratories.
NE	Poisonous reptiles.
1	Blood Borne Pathogens (see Attachment 2).

NE = NOT EXPECTED

IX. AIR MONITORING

Air monitoring should be conducted with instruments selected to measure contaminants to which employees may be exposed. Measurements should be taken within the breathing zones of workers. If action levels are reached for a 1-minute reading, appropriate action must be taken.

A. GASES AND VAPORS

- Instrument and Date of Calibration: Organic Vapor Meter
- Calibration Gas Standard: Internal (OVM)
- Frequency/Duration of Monitoring: immediately upon removal of the well cap
- Action Level(a)(b) Above Background in Breathing Zone: 1 ppm sustained for 1 minute (OVM)
- Action: If substance cannot be identified, leave area and consult HSC.

(a) Action Levels for "Known contaminants" should be based upon each contaminant's Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV).

(b) Action levels for unknown contaminants are based upon the following:

HNu or OVA Measurements in Breathing Zone (reading for one minute)

Background	Level D
>0 - 1 ppm above background	Level D
>1 - 500 ppm above background	Level B
500 - 1000 ppm above background	Level A

Comments:

IX. AIR MONITORING (Continued)

B. EXPLOSION HAZARD **Not Expected**

- Instrument and Date of Calibration:
- Calibration Gas Standard:
- Frequency/Duration of Monitoring:
- Action Level(a)(b) Above Background in Breathing Zone:
- Action:

C. OXYGEN DEFICIENCY **Not Expected**

- Instrument and Date of Calibration:
- Calibration Gas Standard:
- Frequency/Duration of Monitoring:
- Action Level(a)(b) Above Background in Breathing Zone:
- Action:

D. OTHER INSTRUMENTS **Not Needed**

- Instrument and Date of Calibration:
- Calibration Gas Standard:
- Frequency/Duration of Monitoring:
- Action Level(a)(b) Above Background in Breathing Zone:
- Action:

X. REQUIRED PERSONAL PROTECTIVE AND RELATED SAFETY EQUIPMENT

Place the activity number from Section XIV next to each item of personal protective equipment required for that task (see Attachment 3 for description of PPE levels). All required equipment is typed bold-faced. All personal safety must meet ANSI standards or equivalent.

LEVEL A. B. C. D. **XX**

Comments:

Head

1 **Hardhat**

Eye/Face

1 **Safety Glasses** Faceshield
Chemical Goggles

Hand

1 Neoprene **Nitrile** PVC
Viton Underglove other =

Body

NE Full Encapsulating Suit:
Two Piece Rainsuit, Material =
One Piece Splash Suit, Material =
Hooded Tyvek Suit
Hooded Tyvek/Saranex Suit
Hooded Tyvek/Polyethylene Suit
Cloth Coveralls
High Visibility Vest
Other

Lung

NE SCBA (open circuit, pressure demand):
1/2-Mask Respirator, cartridge = organic vapor (if leveling up to C for benzene)
Full Face Respirator, cartridge =
Other

Ear

1 **Earplug, type = foam, if elevated noise levels**
Earmuff, type =

Foot

1 **Steel-toed Boots, type = leather or chemical resistant**
Disposable Overboots, type =

Other Safety Equipment

	Ventilation blower/fan	
As needed	Traffic cones	Lifeline harness
As needed	Barrier tape	Radiation Dosimeter
	Blast alarm	
	Ground fault circuit interrupter	

Comments:

XI. DECONTAMINATION PROCEDURES

A. EQUIPMENT (SAMPLING, CONSTRUCTION, ETC.) DECONTAMINATION (SOLVENTS USED, EQUIPMENT USED, METHOD OF DISPOSAL). ATTACH SITE DECONTAMINATION MAP AS NECESSARY. **All undedicated sampling equipment and sampling meters (if applicable) will be cleaned prior to and between each use. Decontamination fluids will be contained and stored on-site in 55-gallon drums pending appropriate disposal.**

B. PERSONNEL DECONTAMINATION (SOLVENTS USED, METHOD OF SOLVENT DISPOSAL; INCLUDE DECONTAMINATION METHOD OF PPE AND DISPOSAL OF PPE). ATTACH DECONTAMINATION MAP AS NECESSARY. **Decontamination of employees is not expected; however, all disposible PPE will be contained in 55-gallon drums on-site pending appropriate disposal.**

C. INVESTIGATION-DERIVED MATERIAL DISPOSAL

1. Drill cuttings/well water: on-site 55 gallon drums

2. Decontamination solutions: on-site 55 gallon drums

3. Other:

XII. DOCUMENTATION

ENVIRON PERSONNEL TRAINING AND MEDICAL RECORDS ARE AT ENVIRON CORPORATION, ONE PARK PLAZA, SUITE 700, IRVINE, CALIFORNIA.
RECORDS WILL BE MAINTAINED ON-SITE AS NECESSARY (see Attachments 5 and 6 for training and medical surveillance requirements).

A. PROJECT PERSONNEL LIST AND SAFETY PLAN DISTRIBUTION RECORD

1. ENVIRON Employees

All project staff must sign indicating they have read and understand the Site Health and Safety Plan. A copy of this Site Health and Safety Plan must be made available for their review and readily available at the job site.

Employee Name/Job Title	Date Distributed	Signature

2. Contractors, Subcontractors

A copy of this safety plan shall be provided to contractors and subcontractors who may be affected by activities covered under the scope of this Site Health and Safety Plan for their information only, although the contractors and subcontractors remain responsible for the safety of their own employees. All contractors and subcontractors must comply with applicable OSHA, EPA, and local government rules and regulations.

Firm Name	Contract Person	Date Distributed

XII. DOCUMENTATION (Continued)

B. HEALTH AND SAFETY MEETING - ALL PERSONNEL PARTICIPATING IN THE PROJECT MUST RECEIVE INITIAL HEALTH AND SAFETY ORIENTATION. THEREAFTER, A BRIEF TAILGATE SAFETY MEETING IS REQUIRED AS DEEMED NECESSARY BY THE SITE HEALTH AND SAFETY OFFICER (OR AT LEAST ONCE EVERY 10 WORKING DAYS).

Date	Topics	Name of Attendee	Employee Firm Name	Initials

C. VISITOR - IT IS ENVIRON'S POLICY THAT VISITORS MUST FURNISH THEIR OWN PERSONAL PROTECTIVE EQUIPMENT. ALL VISITORS ARE REQUIRED TO SIGN THE VISITOR LOG AND COMPLY WITH HEALTH AND SAFETY PLAN REQUIREMENTS. IF THE VISITOR REPRESENTS A REGULATORY AGENCY CONCERNED WITH SITE HEALTH AND SAFETY ISSUES, THE SITE HEALTH AND SAFETY OFFICER SHALL ALSO IMMEDIATELY NOTIFY HSC.

Name of Visitor	Firm Name	Date of Visit	Signature

XIII. CONTINGENCY/EMERGENCY INFORMATION

A. REQUIRED EMERGENCY EQUIPMENT LOCATION

Safety shower/eyewash: _____
First aid kit: **In ENVIRON field vehicle.**
Fire extinguisher: **In ENVIRON field vehicle.**
Other: _____

B. EMERGENCY TELEPHONE NUMBERS

Ambulance: **911**
Police: **911**
Fire department: **911**
Hospital: **St. Joseph's Medical Center 818-843-5111**
Client contact: **Teresa Olmsted 818-953-2119**
Poison Control Center: **(800) 233-3360**
CHEMTREC: **(800) 424-9300**

Project Manager Office **(714)261-5151** Home _____
HSC Office **(714)261-5151** Home _____

C. STANDARD PROCEDURES FOR REPORTING EMERGENCIES

When calling for assistance in an emergency situation, the following information should be provided:

1. Name of person making call
2. Telephone number at location of person making call
3. Name of person(s) exposed or injured
4. Nature of emergency
5. Actions already taken

Recipient of call should hang up first--not the caller.

D. EMERGENCY ROUTES: ATTACH MAP SHOWING ROUTE TO NEAREST HOSPITAL. DESCRIBE NARRATIVELY THE ROUTE TO THE HOSPITAL. HAS HOSPITAL BEEN CONTACTED TO DETERMINE IF THEY WILL HANDLE A CHEMICAL EXPOSURE?

From the ITT Corporation site (Flower Street exit), go northwest on Flower Street to Alameda Avenue, go southwest on Alameda Avenue approximately 2-miles to So. Buena Vista Street. From the Allen Street exit, go southwest to Flower Street, go northwest on Flower Street to Alameda Avenue approximately 2-miles to So. Buena Vista Street. The St. Joseph's Medical Center is located on the southwest corner of Alameda Avenue and So. Buena Vista Street. Take the injured person to the emergency entrance.

XIII. CONTINGENCY/EMERGENCY INFORMATION (cont.)

E. CONTINGENCY PLANS AS APPROPRIATE: DESCRIBE CONTINGENCY PLANS FOR EMERGENCIES SUCH AS FIRES, EMERGENCY CARE, INJURY, PIPE OR OTHER EQUIPMENT FAILURE. INCLUDE EMERGENCY SIGNALS AND EVACUATION ROUTES. IF FORMAL CONTINGENCY PLAN DOCUMENT HAS BEEN PREPARED, ATTACH A COPY.

In case of emergency, all personnel will meet by the east gate for a head count. All minor injuries will be treated in the field, all personnel requiring medical attention will be taken to St. Joseph's Medical Center.

POST AT JOB SITE (AS APPROPRIATE)

XIV. HAZARD ANALYSES

List all activities in the Job Activity Column and assign a number to each activity (example: 1. Ground Water Sampling)

Identify which categories of hazard exist at each activity.

EXAMPLE

Activity Number	Job Task	Mech.	Elec.	Chem.	Temp.	Acoust.	Fire or Explos.	O_2 Deficiency-Confined Space	Bio-hazard
1	ground water monitoring well pump-out testing	x	x	x	x	x			

FIGURES

ATTACHMENT 1

Hazardous Property Information

ATTACHMENT 1
Hazardous Property Information

Check if Present	Material	Water Solubility[a]	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure[d]	LEL UEL	LD_{50} mg/kg	TLV-TWA[e]	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard[j] Property	Dermal[k] Toxicity	Acute[l] Exposure Symptoms
	Acrolein	22%	0.8410	1.9	-15	214 mm	2.8% 31%	46	0.1 ppm	5 ppm	0.16	BCED	BJ	ABDFGHIKL MNOPQR
	Acrylonitrile	7.1%	0.8060	1.8	30	83 mm	3% 17%	82	2 ppm	4,000 ppm	17	BCEGO	DIG	FGIKLMNOR
	Benzene	820 ppm	0.8765	2.8	12	75 mm	0.339% 7/1%	3800	1 ppm	2,000 ppm	12	BCGO	CIG	BCDFHIKLM NOQR
	Bromomethane	0.1 g	1.732	3.3	None	1.88 atm	13.5%[c] 14.5%		5 ppm[h]	2,000 ppm	No odor	CD		BCDEIJKLM NOQR
	Bromodichloromethane	Insoluble	1.980	--	None		Non-flam	916	None established	None specified		CGO		BIMN
	Bromoform	0.01 g	2.887	--	None	5 mm	Non-flam	1,147	0.5 ppm	n/a	1.3	CED		BCDKLM
	Carbon Tetrachloride	0.08%	1.5967	5.3	None	91 mm	Non-flam	2,800	5 ppm[h]	300 ppm	96	CD	JGH	ABCFGHKM O
	Chlorobenzene	0.01 g	1.1058	3.9	84	8.8 mm	1.3% 9.6%	2,910	10 ppm	2,400 ppm	0.68	BCD	CIF	BCFIKLMNO PQR
	Chloroethane	0.6 g	0.8978	2.2	-58	1.36 atm	3.8% 15.4%		1,000 ppm	20,000 ppm		BCD		BFHIKMNP
	2-Chloroethylvinyl Ether	Insoluble	1.0475	3.7	80	30 mm	--	250	None established	None specified		BCD		NIM
	Chloroform	0.8 g	1.4832	4.12	None	160 mm	Non-flam	800	10 ppm[h]	1,000 ppm	85	CD		BCDGIKLM N
	Chloromethane	0.74%	0.9159	1.8	32	50 atm	7.6% 19%		50 ppm[h]	10,000 ppm		BCD	DHF	ABCDEFGIJ KLOQR
	Dibromochloromethane	Insoluble	2.451	--	--	--	--	848	None established	None specified		BCD		BFHIMNPQ
	1,1-Dichloroethane (DCA)	0.1 g	1.1757	8.4	22	182 mm	6% 16%	725	100 ppm	4,000 ppm	5	BCD		AGHIMNO

ATTACHMENT 1
Hazardous Property Information

Check if Present	Material	Water Solubility[a]	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure[c]	LEL UEL	LD_{50} mg/kg	TLV-TWA[g]	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard[j] Property	Dermal[k] Toxicity	Acute[l] Exposure Symptoms
	1,2-Dichloroethane	0.8%	1.2554	3.4	55	87 mm	6.2% 16%	670	10 ppm[h]	1,000 ppm	6	BCDG		BCFGOLMNQ
	1,1-Dichloroethylene (DCE)	2,250 mg/l @ 77°F	--	3.4	3	591 mm	7.3% 16.0%	200	5 ppm[h]	None specified		BCD		BIMN
	Trans-1,2-Dichloroethylene	Slightly soluble	1.2565	--	36	400 mm	9.7% 12.8%		None established	None specified	17	BCD		ABFILOQ
	1,2-Dichloropropane	0.26%	1.583	3.9	60	40 mm	3.4% 14.5%	1,900	75 ppm	2,000 ppm	50	BCD		ABGHIKMNO
	Cis-1,3-Dichloropropane	Insoluble	1.2	3.8	83	28 mm	5% 14.5%		1 ppm[h]	None specified		BCD		ABGIKLMNP
	Trans-1,3-Dichloropropane	Insoluble	1.2	3.8	83	28 mm	5% 14.5%		1 ppm[h]	None specified		BCD		ABGIKLMNP
	Ethylbenzene	0.015 g	0.867	3.7	59	7.1 mm	1.0% 6.7%	3,500	100 ppm	2,000 ppm	2.3	BCD	CIF	ABFHIKLMNPQR
	Methylene Chloride	Slightly soluble	1.335	2.9	None	350 mm	12%[e] unavailable	167	50 ppm[h]	5,000 ppm	250	CED	CIF	BCIKLMNPR
	1,1,2,2-Tetrachloroethane	0.19%	1.5953	5.8	None	5 mm	Non-flam		1 ppm[h]	150 ppm	3-5	CD		ABCFHIKLMNOQ
	Tetrachloroethylene	0.15 g/ml	1.6227	5.8	None	15.8 mm	Non-flam	8,850	50 ppm[h]	500 ppm		CD		ACFHIKLMNP
	1,1,1-Trichloroethane (TCA)	0.7 g	1.3390	4.6	None	100 mm	8.0%[e] 10.5%	10,300	350 ppm	1,000 ppm	20-400 (500-1,000)	BCED		ABEFHIKLNOP
	1,1,2-Trichloroethane	0.45	1.4397	4.6	None	19 mm	6%[e] 15.5%	1,140	10 ppm	500 ppm	0	C		DEFGHIKMNOPQ
	Trichloroethylene (TCE)	0.1%	1.4642	4.5	90[d]	58 mm	12.5% 90%	4,920	50 ppm[h]	1,000 ppm	28	BC		BFKLNOPQ
	Trichlorofluoromethane	0.11 g	1.494	--	None	0.91 atm	Non-flam		1,000 ppm	10,000 ppm	5	CD		BFHKLQ

ATTACHMENT 1
Hazardous Property Information

Check if Present	Material	Water Solubility[a]	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure[d]	LEL UEL	LD_{50} mg/kg	TLV-TWA[g]	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard[j] Property	Dermal[k] Toxicity	Acute[l] Exposure Symptoms
	Toluene	0.05 g	0.866	3.2	40	22 mm	1.3% 7.1%	5000	100 ppm	2,000 ppm	2.4	BC	BHE	DEFHIKLMN OPQ
	Vinyl Chloride	negligible	.09100	2.24	-108	3.31 atm	3.6% 33%	500	1 ppm	None Specified	3000	BCEG	DJG	ABFHIKLMN
METALS														
	Arsenic	[b]	5.727	n/a	None	n/a	[f]		0.2 mg/m³	None specified		CEG	CJG	ACDGJMOQ R
	Beryllium	[b]	1.85	n/a	None	n/a	[f]		2 µg/m³	None specified		C		IJMNR
	Cadmium	[b]	8.642	n/a	None	n/a	[f]	225	0.05 mg/m³	40 mg/m³		C		ABGHIKLM NQR
	Chromium	[b]	7.20	n/a	None	n/a	[f]		0.5 mg/m³[h]	500 mg/m³		C		FMNQ
	Copper	[b]	8.92	n/a	None	n/a	[f]		0.1 mg/m³	None specified		C		FGIJMOR
	Lead	[b]	11.3437	n/a	None	n/a	[f]		50 µg/m³	None specified		C		ACDFGKOQ R
	Mercury	[b]	13.5939	7.0	None	0.0012 mm	[f]		50 µg/m³[h]	28 mg/m³		C		AGLMNQ
	Nickel	[b]	8.9	n/a	None	n/a	[f]		1 mg/m³	None specified		C		DGHLMNQ
	Silver	[b]	10.5	n/a	None	n/a	[f]		0.01 mg/m³	None specified		C		IN
	Thallium	[b]	11.85	n/a	None	n/a	[f]		0.01 mg/m³	20 mg/m³		C	BG	ABGLNOQ
	Zinc	[b]	7.14	n/a	None	n/a	[f]		None established	None specified		C		DF

ATTACHMENT 1
Hazardous Property Information

Check if Present	Material	Water Solubility[a]	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure[d]	LEL UEL	LD_{50} mg/kg	TLV-TWA[g]	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard[j] Property	Dermal[k] Toxicity	Acute[l] Exposure Symptoms
MISCELLANEOUS														
	Asbestos	Insoluble	2.5	n/a	None	n/a	Non-flam		0.2 fibers/cc	None specified		CG		MN
	Cyanides	58-72%		n/a	None	n/a	Non-flam		5 mg/m^3			CE		FKLMPQ
	PCB (generic)	Slightly	--	n/a	None	n/a	Non-flam		1.0 μg/m^3[i]	None specified		CG		CHLPQ
	Phenol	8.4%	1.0576	3.2	175	0.36 mm	1.8% 8.6%	414	5 ppm	100 ppm	0.04	C		ABCDGIKM NOQR
	Xylene	0.00003%	0.8642	3.7	84	9 mm	1.1% 7%	5,000	100 ppm	10,000 ppm	0.5-200 (200)	BCD		ABFHIKLMN PQ
	Acetone	Soluble	0.8	2.0	-4	400 mm	2.6% 12.8%	9,750	750 ppm	10,000 ppm	13	BCD	DI	H
	Chromic Acid	Soluble	1.67-2.82	n/a	None	n/a	Non-flam		0.05 mg/m^3	None specified		ACEG		GHI
	Diesel Fuel	Insoluble	0.81-0.90	--	130	--	0.6-1.3 6-7.5		None established	None specified	0.08	BC	ABC	IN
	Gasoline	Insoluble	0.72-0.76	3.4	-45	Variable	1.4% 7.6%		300 ppm	None specified	0.005-10 x0.25	CD	AB	IN
	Kerosene	Insoluble	0.83-1.0	--	100-165	5	0.7% 5.0%		None established	None specified	1.0	BCD	AB	IN
SITE-SPECIFIC SUBSTANCES (Add hazardous property information on any substances that are of concern at the Site but are not listed above.)														

ATTACHMENT 1
Hazardous Property Information

Check if Present	Material	Water Solubility[a]	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure[f]	LEL UEL	LD_{50} mg/kg	TLV-TWA[g]	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard[j] Property	Dermal[k] Toxicity	Acute[l] Exposure Symptoms

EXPLANATIONS AND FOOTNOTES

Water solubility is expressed in different terms in different references. Many references use the term "insoluble" for materials that will not readily mix with water, such as gasoline. However, most of these materials are water soluble at the part per million or part per billion level. Gasoline, for example, is insoluble in the gross sense, and will be found as a discrete layer on top of the ground water. But certain gasoline constituents, such as benzene, toluene, and xylene, will also be found in solution in the ground water at the part per million or part per billion level.

[a] Water solubility expressed as 0.2 g means 0.2 grams per 100 grams water at 20°C.

[b] Solubility of metals depends on the compound in which they are present.

[c] Several chlorinated hydrocarbons exhibit no flash point in a conventional sense, but will burn in the presence of high energy ignition source or will form explosive mixtures at temperatures above 200°F.

[d] Practically non-flammable under standard conditions.

[e] Expressed as mm Hg under standard conditions.

[f] Explosive concentrations of airborne dust can occur in confined areas.

[g] Values for Threshold Limit Value-Time Weighted Average (TLV-TWA) are OSHA Permissible Exposure Limits (PELs) except where noted in h and i.

[h] TLV-TWA adopted by the American Conference of Governmental Industrial Hygienists (ACGIH), which is lower than the OSHA PEL.

[i] TLV-TWA recommended by the National Institute for Occupational Safety and Health (NIOSH). A TLV or PEL has not been adopted by ACGIH or OSHA.

[j].
- A - corrosive
- B - flammable
- C - toxic
- D - volatile
- E - reactive
- F - radioactive
- G - carcinogen
- H - infections

ATTACHMENT 1
Hazardous Property Information

Check if Present	Material	Water Solubility[a]	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure[f]	LEL UEL	LD_{50} mg/kg	TLV-TWA[g]	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard[j] Property	Dermal[k] Toxicity	Acute[l] Exposure Symptoms

k Dermal Toxicity data is summarized in the following three categories;

Skin Penetration

- \- A - negligible penetration (solid-polar)
- \+ B - slight penetration (solid-nonpolar)
- ++ C - moderate penetration (liquid/solid-nonpolar)
- +++ D - high penetration (gas/liquid-nonpolar)

Systemic Potency

- E - slight hazard - LD_{50} = 500-15,000 mg/kg
  lethal dose for 70 kg man = 1 pint-1 quart
- F - moderate hazard - LD_{50} = 50-500 mg/kg
  lethal dose for 70 kg man = 1 ounce-1 pint
- G - extreme hazard - LD_{50} = 10-50 mg/kg
  lethal dose for 70 kg man = drops to 20 ml

Local Potency

- H - slight - reddening of skin
- I - moderate - irritation/inflammation of skin
- J - extreme - tissue destruction/necrosis

l Acute Exposure Symptoms

- A - abdominal pain
- B - central nervous system depression
- C - comatose
- D - convulsions
- E - confusion
- F - dizziness
- G - diarrhea
- H - drowsiness
- I - eye irritation
- J - fever
- K - headache
- L - nausea
- M - respiratory system irritation
- N - skin irritation
- O - tremors
- P - unconsciousness
- Q - vomiting
- R - weakness

ATTACHMENT 2

Blood Borne Pathogens

ATTACHMENT 2

Blood Borne Pathogens

1. Description and Scope

Besides Hepatitis B and Human Immunodeficiency Virus (HIV), bloodborne pathogens include any pathogenic microorganism that is present in human blood and can infect and cause disease in person who are exposed to blood containing the pathogen.

This program covers all employees who are required to render medical assistance as part of their job duties. This primarily includes employees designated by ENVIRON to be responsible for rendering first aid at the Site.

2. Exposure Determination

The employees who are first aid trained and are required by ENVIRON to render first aid at specific job sites or locations will come under the Bloodborne Pathogens Exposure Control Policy. Not all employees are required to render first aid or Cardiopulmonary resuscitation (CPR), unless the performance of first aid is a part of an employee's designated job duty. Employees designated to render life saving actions include those who voluntarily take on first aid responsibilities, as part of their job description, and are available during normal work shifts.

3. Methods of Compliance

The best method for ensuring the health of workers at risk is to understand and follow the concept of universal precautions as it applies to an employee's duties and work practices. This concept refers to the assumption that all blood and bodily fluids are contaminated with pathogens. Instruction in Universal Precautions shall take place during initial and annual training CPR and First Aid training.

4. Engineering and Work Practice Controls

Hand washing is a primary work practice control. If this is not available or feasible, then alternative methods, such as antiseptic hand cleaners, in conjunction with clean cloths or paper towels, or antiseptic towels will be provided. When these alternative methods are used, employees shall wash their hands (or other affected areas) with soap and running water as soon as feasible thereafter.

5. Personal Protective Equipment

Latex or vinyl gloves shall be worn when first aid begins and until treatment stops. A mouth shield will also be used if CPR is administered. One should assume all patients may be infectious.

All medical wastes generated as result of administering first aid shall be placed in properly labeled containers and disposed of in a manner consistent with local and state regulatory requirements.

6. Hepatitis B Vaccination

Hepatitis B vaccinations will be made available as soon as possible, but in no event later than 24 hours, to all unvaccinated first aid providers who have rendered assistance in any situation involving the presence of blood or other potentially infectious material (OPIM) regardless of whether or not an actual exposure incident may have occurred. An investigation and a written report of the incident shall be on file.

7. Post-Exposure Evaluation and Follow-up

All first aid rendered incidents involving the presence of blood or OPIM must be reported to their supervisor before the end of the work shift during which the first aid care incident occurred. The report will have the following elements:

- The names of all first aid providers who rendered assistance, regardless of whether personal protective equipment was used.
- Description of the incident, including time and date.
- A determination of whether or not, in addition to the presence of blood or OPIM, an exposure incident occurred.
- Documentation of the route of exposure and the circumstance under which the exposure occurred.
- Identification and documentation of the source individual, unless this is not feasible or prohibited by law.
- The report shall be recorded on a list of such first aid care incidents. This report shall be available to all employees.

Collection and testing of blood for Hepatitis B and HIV serological status as well as other tests as deemed necessary will be provided to the exposed employee at no cost. Following any medical evaluation, the attending health care professional must provide the employee with a written opinion within 15 days. If the medical evaluation determines a positive exposure, then an injury/illness report shall be completed.

8. First Aid Incident Reporting Procedures

The reporting requirements are stringent when employees render first aid assistance in a situation that involves the presence of blood. The Project Manager shall ensure that:

- A first-aid incident report is generated;
- A list of incidents where first aid assistance is rendered is established; and
- All reports of first aid care incidents are recorded on the list.

All other occupational exposure incidents involving exposure to bodily fluids or blood shall be recorded and maintained for each employee. For bloodborne pathogens, the following must also be included:

- Employee's name and social security number;
- Employees' Hepatitis B vaccination status, including vaccination dates and any medical records related to the employee's ability to receive vaccinations;
- Results of examination, medical testing, and post-exposure evaluation and follow-up procedures;
- Health care professional's written opinion; and
- A copy of the information provided to the health care professional. Employee records must be kept confidential and maintained for the duration of employment plus 30 years.

ATTACHMENT 3

Levels of Personal Protective Equipment (PPE)

ATTACHMENT 3

Levels of Personal Protective Equipment (PPE)

1. Selection of PPE

The selected PPE should be able to resist degradation, penetration, and permeation by the contaminants present at the Site. In selecting the appropriate protective material, the following should be considered: chemical resistance; tear and puncture resistance; flexibility; thermal stress; cleanability; and durability.

PPE will be selected, used and maintained in accordance with 29 CFR 1910.132, *General requirements*. Eye and face PPE requirements will be in accordance with 29 CFR 1910.133, *Eye and face protection*, and ANSI Z87.1-1979. Respiratory protection will be selected in accordance with 29 CFR 1910.134, *Respiratory protection*. Selection of foot protection will conform with ANSI Z41.1-1983, and 29 CFR 1910.136, *Occupational foot protection*. PPE for the head will be in accordance with 29 CFR 1910.135, *Occupational head protection*, and ANSI Z89.1-1986.

A. Levels of PPE

The four levels of PPE are Levels A, B, C, and D, with Level A providing the highest available level of respiratory, skin, and eye protection. Since proposed Site activities will not require use of Level A PPE, it is not discussed in this HASP. A summary of the basic PPE ensemble for Levels B, C, and D is provided in Table 8-1. PPE selection for operations at the Site will be tailored to address specific task conditions, so the OU-specific Parts (B through F) of the HASP should be reviewed to obtain specific PPE requirements. The basis for selecting Levels B, C and D PPE are provided below.

B. Level B

Level B PPE provides the maximum level of respiratory protection. Since chemical-resistant clothing is not considered gas, vapor, or particulate tight, Level B PPE does not provide the maximum skin protection. However, a good quality, hooded, chemical-resistant one-piece garment with taped wrists and ankles provides a reasonable degree of protection against splashes of liquids and lower concentrations of chemicals in ambient air. It is the minimum level recommended for confined space entries and initial Site entries until the hazards have been further identified. Level B PPE should be used when **any** one of the following criteria is met:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection but less skin protection -- this includes atmospheres with IDLH concentrations of specific substances that do not represent a severe skin hazard or atmospheres that do not meet the criteria for use of air-purifying respirators;

- Atmosphere contains less than 19.5% oxygen; or

- Presence of incompletely identified vapors or gases is indicated by air monitoring instruments but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.

C. Level C

Level C PPE provides the same level of skin protection as Level B PPE, but a lower level of respiratory protection. Air-purifying respirators can be used only if the substance has adequate warning properties; the

individual passes a qualitative fit-test for the mask; an appropriate cartridge/canister is used and its service limit concentration is not exceeded; and Site operations are not likely to generate unknown compounds or excessive concentrations of already identified substances. Level C PPE can be used when **all** of the following conditions are met:

- Oxygen concentrations are not less than 19.5%;
- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin;
- Types of air contaminants have been identified, concentrations measured, and a cartridge or canister is available that can remove the contaminant;
- Atmospheric contaminant concentrations do not exceed IDLH levels; and
- Job functions do not require self-contained breathing apparatus (SCBAs).

D. Level D

Level D PPE provides minimal skin protection and no respiratory protection. Level D PPE can be used when the following conditions are met:

- Atmosphere contains no known hazard;
- Oxygen concentrations are not less than 19.5%; and
- Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

2. Respirator Fit Test

A respirator fit test will be conducted on all Site personnel who will perform work operations in areas other than the Support Zone. Prior to the initiation of any fit testing, personnel must be certified as medically able to wear a respirator. The respirator fit test is conducted to ensure proper facepiece-to-face seal. A secure fit is important with positive-pressure equipment, and is essential to the safe functioning of negative-pressure equipment, such as most air-purifying respirators. Personnel will receive instruction on proper wear and maintenance of the respirator.
Qualitative fit tests will be conducted annually in accordance with the ANSI *Practices for Respiratory Protection*, Z88.2-1989. In addition, a negative and positive fit check will be performed each time an employee dons the air-purifying respirator (APR). Documentation of annual respirator fit tests will be kept in the Support Zone.

A. Negative and Positive Fit Check

The negative and positive pressure fit check will be performed each time an employee dons the APR. The negative pressure fit check involves closing off the inlet openings to the APR cartridges by covering with the palms of the hands. If an inward leakage of air is detected, the APR should be checked for material defects and refitted or replaced with another APR.

The positive pressure fit check is performed by placing the palm of hand over the exhalation valve and gently exhaling for 10 seconds to create positive pressure inside the facepiece. If an outward air leak is detected, the APR should be readjusted. If after readjustment leakage still occurs, another APR should be used.

3. PPE Inspection Checklist and Maintenance

PPE inspections will be conducted upon receipt of PPE from the factory or distributor; when it is issued to workers; after use or training; and prior to maintenance. Periodic inspections of stored equipment will be conducted routinely, whenever a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise. At a minimum, PPE inspection should include the following:

A. Clothing

Before use:

- Determine that the clothing material is correct for the specified task.
- Visually inspect for:
  - Imperfect seams
  - On-uniform coatings
  - Tears
  - Malfunctioning Closures
    - Hold up to light and check for pinholes
    - Flex product
  - Observe for cracks
  - Observe for other signs of shelf deterioration
    - If the product has been used previously, inspect inside and out for signs of chemical breakthrough or deterioration, such as:
  - Discoloration
  - Swelling
  - Stiffness

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind that chemical permeation can occur without any visible effects.
- Closure failure
- Tears
- Punctures
- Seam discontinuities

B. Gloves

- Before use, pressurize glove to check for pinholes. Either blow into glove, then roll gauntlet towards fingers or inflate glove and hold under water. In either case, no air should escape.

C. Respirators

SCBA/supplied air/air-purifying:

- Inspect SCBA/supplied air/air-purifying respirators before and after each use, at least monthly when in storage and during cleaning. Air-purifying respirators should be inspected before each use to be sure they have been adequately cleaned.

- Check all connections for tightness, inspect air lines prior to each use for cracks, kinks, cuts, frays, and weak areas.

- Check for proper setting and operation of regulators and valves (according to manufacturer's recommendations) and check operation of alarms.

- Check material conditions for:

  - Signs of pliability
  - Signs of deterioration
  - Signs of distortion

- Check faceshields and lenses for:

  - Cracks
  - Crazing
  - Fogginess

- Examine cartridges or canisters to ensure that:

  - They are the proper type for the intended use,
  - The expiration date has not passed, and
  - They have not been opened or used previously.

ATTACHMENT 4

Personnel Training Requirements

ATTACHMENT 4

Personnel Training Requirements

All personnel performing on-site operations with the potential for exposure to hazardous substances or health hazards will meet the personnel training requirements in accordance with 29 CFR 1910.120(e). The training policies and procedures will ensure that personnel can recognize hazards, understand emergency response procedures, and have the knowledge necessary to enable them to perform their assigned jobs in a manner that ensures employee and public safety. Documentation of appropriate health and safety training, as described below, and medical surveillance participation, as described in Section 7 of Part A of the HASP, will be required to gain access to on-site areas other than the Support Zone. Documentation of all training, including initial 24-hour or 40-hour health and safety training, 8 hours of annual refresher training, 8 hours of supervisor training, supervised field experience, first aid training, CPR certification, and confined space entry or Level B training, if applicable, will be kept on-site.

1. **Initial Training**

A. Basic Health and Safety Training

A minimum of 24 hours of initial health and safety training off-site is required to obtain on-site access to areas other than the Support Zone. All personnel engaged in or supervising activities in the EZ or CRZ will have a minimum of 40 hours of initial health and safety training off-site, meeting the requirements of 29 CFR 1910.120(e)(3).

All personnel involved in planning or participating in confined space entry(ies) will be trained as described in Section 11 of Part A of the HASP. This will include training in use of Level B personal protective equipment (PPE). Section 11 of Part A of the HASP provides detailed information on personnel training requirements for confined space entry.

B. Supervised Field Experience

All personnel with 24 hours of initial health and safety training are also required to have a minimum of 1 day of field experience under the direct supervision of an experienced supervisor. Personnel with 40 hours of initial health and safety training are required to have a minimum of 3 days of field experience under the direct supervision of an experienced supervisor.

C. Supervisor Training

All on-site managers and supervisors directly responsible for, or who supervise personnel engaged in invasive site activities will have received the initial 40-hour health and safety training and at least 8 additional hours of specialized off-site training consistent with 29 CFR 1910.120(e)(4). This specialized training will include topics such as, but not limited to, regulatory compliance, management of on-site health and safety hazards and recognition of special personnel training needs.

D. Health and Safety Officer Training

Health and safety officers will be trained to a level required by their job function and responsibility. This will include training in implementation of HASPs and compliance with applicable health and safety requirements.

E. First Aid and CPR Training

A minimum of two individuals certified by the American Red Cross (or equivalent) to render first aid and CPR will be available during each shift. The Site Health and Safety Officer (SHSO) will have first aid and CPR training. A list of additional on-site personnel qualified to perform first aid and CPR will be posted throughout the Site.

2. Refresher Training

All personnel who have received 24 hours or 40 hours of initial health and safety training will receive 8 hours of refresher training annually, as specified in 29 CFR 1910.120(e)(8). Topics to be covered in this training program will include those specified in the initial 40-hour health and safety training and/or those specified in the supervisory training course, as well as a critique of incidents that could serve as training examples.

Project-specific refresher training will be provided when the project scope is changed and/or when the hazards change.

A. Site Safety Briefings

Site safety briefings will be conducted prior to the start of each work day or work shift to discuss health and safety issues, changes in work procedures, exposure incidents and other relevant information. The SHSO and Site Coordinator will conduct these meetings. Prior to each change in operations, the meetings will address PPE use and maintenance, physical safety hazards from machinery, protection from chemical hazards, decontamination procedures, protection from heat/cold stress and specific safety requirements associated with the new operations. During the meetings, the SHSO or SC will identify on-site personnel qualified to perform first aid and CPR. All changes in the HASP will be reviewed during the morning safety briefing. A record of the meeting will be written daily and signed by all participants. These records will be stored in the field office.

B. Visitor's Briefing

Visitors will not be permitted to enter areas other than the Support Zone unless documentation of training, as described above, is presented to the SHSO. All visitors will be trained by the SHSO in hazard recognition, personnel hygiene and Site safety rules, use of PPE, and emergency response procedures. Visitors requesting on-site access to areas other than the Support Zone will be required to review and sign off on the HASP (see Section 12 of the HASP) to ensure understanding and compliance with the provisions in the HASP.

ATTACHMENT 5

Medical Surveillance

ATTACHMENT 5

Medical Surveillance

The goals of the medical surveillance program are to monitor the health of potentially exposed personnel through the use of medical examinations and diagnostic laboratory testing, to provide medical care for occupational injury or illness, to keep accurate records for future reference and to ensure the selection of personnel physically able to safely perform the work assigned. The medical surveillance program supports and monitors the effectiveness of the primary health and safety goal of controlling worker exposure to hazardous substances. OSHA regulations relating to medical surveillance during hazardous waste operations are detailed in 29 CFR 1910.120(f). Medical examinations will be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine. Documentation of current participation in a medical surveillance program and fitness for duty, including ability to wear respiratory protective equipment, will be necessary for all personnel who work on-site in areas other than the Support Zone. However, all specific medical information and examination results obtained in the course of administration of the medical surveillance program will be maintained by the examining physician as confidential.

1. Baseline Medical Examinations

The baseline medical examination serves two major purposes: (1) it determines the individual's fitness for duty, including the ability to work while wearing a respirator; and (2) it provides baseline data for comparison with future medical data. The baseline medical examination will include, at a minimum, the following:

- Complete occupational and medical history;
- Physical examination;
- Blood count and chemistry profile;
- Urinalysis with microscopic review;
- Chest x-ray;
- Pulmonary function tests;
- Resting electrocardiogram (EKG); and
- Cardiac stress test (at physician's discretion).

Certification of fitness for duty and ability to wear personal protective equipment must be provided to gain access to on-site areas other than the Support Zone. However, all specific medical information obtained in the course of administration of the medical surveillance program will be maintained as confidential.

2. Periodic Medical Examinations

Each individual enrolled in the medical surveillance program will be subject to periodic medical surveillance examinations. In general, personnel involved in field activities with a frequency of greater than 30 days per year will receive medical examinations at least annually. Periodic medical examinations should include the parameters included in the baseline examination, with the exception of the chest x-ray and EKG, which are repeated after the baseline examination at the physician's discretion and with agreement of the individual.

3. Special Medical Examinations

Special medical examinations or consultations will be arranged for personnel exposed in an emergency situation to hazardous substances at concentrations above the OSHA-PELs without adequate protection. This will be done as soon

as possible after the overexposure has been determined by the SHSO, in consultation with the Health and Safety Manager.

Special medical examinations shall also be arranged upon notification by the individual that he/she has developed signs or symptoms indicating a possible overexposure to hazardous substances, or if the examining physician determines that more frequent medical examinations are necessary. Non-scheduled medical examinations may also be directed at the discretion of the Health and Safety Technical Committee and the Site Health and Safety Officer.

4. Special Circumstances

Any individual who is on a medication that may interfere with the ability to perform his/her job function, or who may require special medical attention, must notify the SHSO of these circumstances prior to commencing work at the Site.